DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention relates to systems and methods for verifying the authorization of a server to provide network resources to a client. Repeatedly, and at specified times, the client initiates communication with the server and transmits a first encrypted message to the server. An authorized server has access to a decryption key that is used to decrypt the first encrypted message. If, however, the server is unauthorized, the message cannot be decrypted. When the first encrypted message has been successfully decrypted, the authorized server generates a second encrypted message and transmits it to the client. Based on the contents of the second encrypted message, the client can determine whether the server is authorized to provide the network resources.

The invention is described below by using diagrams to illustrate either the structure or processing of embodiments used to implement the system and method of the present invention. Using the diagrams in this manner to present the invention should not be construed as limiting of its scope. The embodiments of the present invention may comprise a special purpose or general purpose computer including various computer hardware, as discussed in greater detail below. The embodiments may further comprise multiple computers linked in a network environment.

Embodiments within the scope of the present invention include computer readable media having computer-executable instructions or data structures stored thereon. Such computer readable media can be any available media which can be accessed by a general purpose or special purpose computer. By way of example, and not limitation, such computer readable media can comprise RAM, ROM, EEPROM, CD-ROM or other optical disk storage, magnetic disk storage or other magnetic storage devices, or any other medium which can be used to store the desired computer-executable instructions or data structures

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1   and which can accessed by a general purpose or special purpose computer. Combinations of

2   the above should also be included within the scope of computer readable media. Computer-

3   executable instructions comprise, for example, instructions and data which cause a general

4   purpose computer, special purpose computer, or special purpose processing device to

5   perform a certain function or group of functions. The computer-executable instructions and

6   associated data structures represent an example of program code means for executing the

7   steps of the invention disclosed herein.

8   Figures 1 and 2 and the following discussion are intended to provide a brief, general

9   description of a suitable network and computing environment in which the invention may be

10   implemented. Although not required, the invention will be described in the general context

11   of computer-executable instructions, such as program modules, being executed by a personal

12   computer. Generally, program modules include routines, programs, objects, components,

13   data structures, etc. that perform particular tasks or implement particular abstract data types.

14   For illustration purposes, the invention is described herein in reference to the

15   Internet, which represents one example of the network environments that are compatible

16   with the invention. However, the principles disclosed herein are also applicable to

17   substantially any other network environment in which a server provides network resources

18   to a client. For example, a smart card or another PCMCIA device can be used as an

19   intermediary device that communicates with the server and, in turn, with the client.

20   Figure 1 illustrates one embodiment of the architecture of an network environment in

21   which the invention may be implemented. In this embodiment, multiple client systems 10

22   communicate with a modem pool 12 by means of direct-dial, bi-directional data connections

23   14, which may be conventional telephone lines, ISDN connections, connections supported

24   by cable television providers, or any other suitable communications channel. Modem pool

1   12 may be any conventional modem pool, such as those that are currently used for providing

2   access to the Internet and other wide area networks. For example, modem pool 14 may be

3   provided by a local ISP. Thus, modem pool 14 may be coupled to a number of server

4   computers, such as remote servers 16, via a conventional network infrastructure, which may

5   be Internet infrastructure 18.

6   The systems and methods of verifying the authorization of a server can be practiced

7   in network environments that combine information retrieval over the Internet with television

8   viewing. As seen in Figure 1, at least some of client systems 10 can be associated with

9   display devices 20 that serve a dual function. First, display devices 20 display graphical,

10   computer-generated or computer-transmitted information provided by client systems 10.

11   World Wide Web ("Web") pages retrieved from remote servers 16 represent one example of

12   the graphical information that may be displayed on display devices 20. Second, television

13   programming transmitted from television programming source 22 may also be displayed on

14   display devices 20. Television programming source 22 may be any desired television

15   broadcaster or delivery system. Accordingly, display device 20 may be a conventional

16   television or may instead be a computer monitor adapted to display television programming.

17   Indeed, the client system is optionally integrated in a television, or instead may be a self-

18   contained unit. It is anticipated that, as high definition television ("HDTV") becomes

19   common, embodiments of client terminal 26 will support HDTV. As used herein, "client

20   terminal" 26 is defined to include a client system 10 and a display device 20.

21   Optionally, the system of Figure 1 can include a dedicated server 26 that is dedicated

22   to providing Internet access to some or all of client systems 10. In this example, dedicated

23   server 26 differs from modem pool 12 in that the dedicated server is specifically designed to

24   service a particular type of client system 10 in contrast to serving any personal computer or

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